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PROCEEDINGS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY.

VOL. I. NOVEMBER & DECEMBER, 1840. No. 14.

Stated Meeting, November 6.

Present, twenty-four members.

Mr. DU PONCEAU, President, in the Chair.

The following donations were received:—

FOR THE LIBRARY.

The History of the late Province of New York, from its Discovery to the Appointment of Governor Colden in 1762. By the Hon. William Smith, formerly of New York, and late Chief Justice of Lower Canada. 2 Vols. 8vo. New York, 1830.—*From the New York Historical Society.*

A Full Report of the Case of Stacy Decow and Joseph Hendrickson *vs.* Thomas L. Shotwell; decided at a Special Term of the New Jersey Court of Appeals, held at Trenton in July and August, 1833, &c. &c. [This law case grew out of the division existing in the Society of Friends.] 8vo. Philadelphia, 1839.—*From Mr. Vaughan.*

The Case of the Seneca Indians in the State of New York, illustrated by Facts; printed for the Information of the Society of Friends, &c. &c. 8vo. Philadelphia, 1840.—*From Mr. Justice.*

Notice of the Oolitic Formation in America, with Descriptions of some of its Organic Remains. By Isaac Lea. Read before the American Philosophical Society, May 15, 1840.—*From the Author.*

L'Europa; Quadro Fisiografico facilmente inteso. Opera del Prof. J. C. Schow, Danese, notommizata da Jacopo Gråberg da Hemsö. 8vo. Milano, 1839.—*From J. Graoberg da Hemsö.*

Degli ultimi Progressi della Geografia. Sunto presentato al primo Consesso Scientifico Italiano, tenuto in Pisa nell' Ottobre dell' anno 1839, da Jacopo Grâberg da Hemsö, &c. &c.—*From the same.*

Statistica dell' Italia del Colonello Conte Luigi Serristori. Estratto dalla Rivista Europea del 30 Gennaio, 1840.—*From the same.*

Notation Hypsométrique ou Nouvelle Manière de noter les Altitudes, par M. Jomard, Membre de l'Institut: suivi de plusieurs fragments et de Nouvelles Récentes de la Nubie et de l'Abyssinie.—*From the Author.*

Extrait du Rapport fait à la Société de Géographie de Paris, à l'Assemblée Générale du 6 Décembre, 1839; par M. Sabin Berthelot, Secrétaire Général de la Commission Centrale. 8vo. Paris, 1840.—*From the same.*

Rapport fait (par M. Jomard) à l'Académie Royale des Inscriptions et Belles-Lettres dans sa Séance du 12 Juin, 1835. Sur un Pied Romain trouvé dans la Forêt de Maulevrier, &c. &c. 4to.—*From the same.*

China Opened: or a Display of the Topography, History, Customs, Manners, Arts, Manufactures, Commerce, Literature, Religion, Jurisprudence, &c., of the Chinese Empire. By the Rev. Charles Gutzlaff. Revised by Andrew Reed, D.D. 2 Vols. Small 8vo. London, 1838.—*From Mr. Dunn.*

Report of the Committee of the House of Representatives in the Case of N. P. Trist, American Consul at the Havana, with the Documents.—*From Dr. Dunglison.*

The American Journal of Science and Arts. Conducted by Benjamin Silliman, M.D., LL.D., &c. &c., aided by Benjamin Silliman, Jr., A.M. Vol. XXXIX. No. 2. October, 1840.—*From the Editors.*

Dr. Dunglison, Reporter, stated that No. 13 of the Proceedings of the Society was ready for distribution, and placed a copy thereof on the table.

The Committee, consisting of Mr. Walker, Dr. Patterson, and Prof. Bache, to whom was referred a paper, entitled "Observations upon the Meteors of August, by C. G. Forshey, &c. &c." reported in favour of publication in the Society's Transactions, which was ordered accordingly.

The principal points discussed in this paper are noticed in an oral communication made by Mr. Walker on the 21st of August. (See Proceedings, No. 13, p. 261.)

The Committee, consisting of Dr. Patterson, Prof. Bache, and Mr. Walker, to whom was referred a communication from Mr. Nulty to Mr. Lea, on a new property which he had found in his Magic Cyclovolute, described in the seventh article of the fifth volume of the Society's Transactions, reported that they had learned from the author, that his communication was not intended for the Transactions, and that he did not desire it to take that destination; they therefore requested to be discharged, which was ordered accordingly.

The new property is as follows:—"The eight volutes which originate at the extremities of the principal diameters, AA', BB', are divided by these diameters, so that every *four numbers* along each volute, both towards its origin and the centre of the interior circle, with half the *central number twelve*, make 180." This property, Mr. Nulty remarks, is analogous to the third, mentioned in his paper; distinguishes the particular set of numbers which he had selected from other sets possessing the properties already noticed, and renders his drawing more general, and the arrangement, there presented, *unique*.

A communication was read, entitled "Observations to determine the Magnetic Intensity at several Places in the United States, with some additional Observations of the Magnetic Dip, by Elias Loomis, Professor of Mathematics and Natural Philosophy in Western Reserve College," which was referred to a Committee.

Professor Bache submitted to the Society a Chart, representing the extraordinary variations of the magnetic declination during the term day, on the 29th of May last, prepared by W. C. Bond, Esq., from the observations at the Magnetic Observatory at Cambridge.

Dr. Horner read a paper on the dental system of the Mastodon, which was referred to a Committee.

Professor Bache read an extract of a letter from Lieut. Ridell, Director of the Magnetic Observatory at Toronto, U. C.,

which stated that an entire discordance had been found between the curve representing the changes of inclination, on the February magnetic term day, at Toronto, Dublin, Brussels, and Prague, whilst those at the last three named stations agreed very well together. This result, Professor B. stated, confirms the conclusions previously drawn from the observations at short intervals, of Prof. Lloyd and himself, in November last.

Mr. Walker made some observations in relation to the Observatory of the Harvard University, Cambridge, and stated that extensive arrangements had been made, and were in contemplation, for prosecuting magnetic observations and practical astronomy.

Professor Bache made a verbal communication of some recent determinations of the magnetic dip, made by him at Philadelphia and Baltimore.

He reminded the Society, that on a former occasion he had submitted a comparison of the observations for magnetic dip at various stations, common to the series of Professor Loomis (Am. Philos. Soc. Trans. Vol. VII. N. S.), and to that of Professor Courtenay and himself. The discrepancies at Philadelphia and Baltimore were among the most striking. Having satisfied himself that the dip given by his instrument at the station occupied by Prof. Loomis, near Philadelphia, was sensibly the same as that given by Prof. Loomis, his next step was to ascertain, by observations in a different position from those used in both the sets of observations formerly made, which probably represented more correctly the dip at Philadelphia. The result of two series of observations near the observatory at the Girard College (at a sufficient distance to be beyond sensible influence from the magnetic instruments), made with four different needles, was as follows:—

July 21, 1840. No. 1, $71^{\circ} 51.7'$. No. 2, $71^{\circ} 51.7'$. Mean of Lloyd, No. 1 and No. 3, $71^{\circ} 55.8'$.

November 2, 1840. No. 1, $71^{\circ} 51.2'$. No. 2, $71^{\circ} 51.0'$. Mean of Lloyd, No. 1 and No. 3, $71^{\circ} 57.4'$.

Mean, $71^{\circ} 53.3'$.

The needles, termed Lloyd No. 1 and No. 3, are used without reversing the poles; and a correction has been applied from the mean of sixteen comparisons, with the ordinary needles, at different places: as, however, this correction is obtained through Nos. 1 and 2, the

results merely add to the number of observations from which the mean is obtained.

Prof. Bache remarked that his former result was thus confirmed.

At Baltimore, the place of observation was in the second square, N. E. of the Washington Monument. The same needles were used.

Aug. 27, 1840. No. 1, $71^{\circ} 31.7'$. No. 2, $71^{\circ} 39.1'$. Mean of Lloyd, No. 1 and No. 3, $71^{\circ} 32.4'$. Mean $71^{\circ} 34.4'$, differing from the results of both the former series.

Prof. Bache stated, in continuation, that the geological formations at and near Baltimore, rendered it difficult to select an unexceptionable site for magnetic observations there, and was a sufficient explanation of the observed discrepancies. The results, which he had at present obtained, differed about $10'$ from the mean of those of Professors Courtenay and Loomis.

Dr. Patterson announced the death of Prof. Charles Bonycastle, a member of this Society (elected at the last meeting), which took place on the 31st of October.

Mr. Du Ponceau announced the death of Mr. Sylvanus Gordon, a member of the Society, who died on the 17th of October.

The Observatory Committee submitted a report, in part, on the subject of the fund raised for the erection of an Observatory, and proposed the following resolutions, which were adopted.

Resolved, That if the City Councils shall grant to the Society the privilege of erecting an Observatory in Rittenhouse Square, the Society will pledge \$5000 of the Astronomical Fund for this object, under such conditions as they shall hereafter prescribe.

Resolved, That when it shall be ascertained that the proposed Observatory can be erected, the Observatory Committee be authorized to solicit and receive subscriptions for such additions to the Astronomical Fund, as may be rendered necessary by the undertaking.